Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

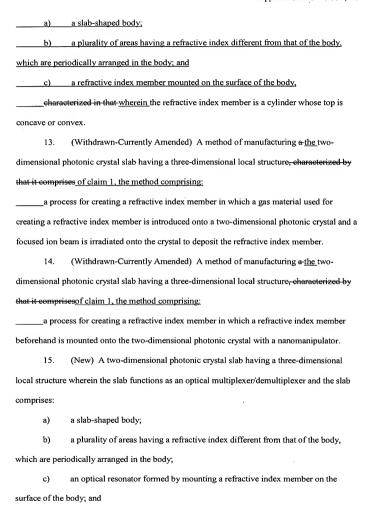
- (Currently Amended) A two-dimensional photonic crystal slab having a threedimensional local structure, characterized by that it comprises comprising:
 - a) a slab-shaped body;
- a plurality of areas having a refractive index different from that of the body,
 which are periodically arranged in the body; and
- an optical resonator formed by mounting a refractive index member mounted on the surface of the body.
- (Currently Amended) The two-dimensional photonic crystal slab having a threedimensional local structure according to claim 1, eharacterized in that it comprises further comprising:

_____a waveguide formed by providing a linear defect of the modified refractive index areas in proximity to the refractive index member.

- 3. (Currently Amended) The two-dimensional photonic crystal slab having a three-dimensional local structure according to claim I, eharacterized in that wherein two or more pieces of the refractive index members differing in material, shape or size are mounted on the body.
- 4. (Currently Amended) The two-dimensional photonic crystal slab having a three-dimensional local structure according to claim 1, eharacterized in that wherein a point-like defect of the modified refractive index areas are provided within the body and a refractive index member is additionally mounted at the position of the point-like defect.
- (Currently Amended) The two-dimensional photonic crystal slab having a three-dimensional local structure according to claim 4, characterized in that wherein a plurality

of point-like defects of the modified refractive index areas having different resonant wavelengths are provided within the body, and a plurality of the refractive index members identical in material, shape and size are arranged on a surface of the body at positions of the point-like defects.

- (Currently Amended) The two-dimensional photonic crystal slab having a
 three-dimensional local structure according to claim 1, eharacterized in that wherein the
 refractive index members are mounted on both sides of the body.
- (Currently Amended) The two-dimensional photonic crystal slab having a threedimensional local structure according to claim 6, eharacterized in that wherein the refractive index members are mounted at the same position on both sides of the body.
- (Currently Amended) The two-dimensional photonic crystal slab having a threedimensional local structure according to claim 7, eharacterized in that wherein identical refractive index members are mounted at the same position on both sides of the body.
- 9. (Currently Amended) The two-dimensional photonic crystal slab having a three-dimensional local structure according to claim 1, eharaeterized in that wherein it is provided with a point-like defect of the modified index areas asymmetrical between front and back sides.
- 10. (Currently Amended) The two-dimensional photonic crystal slab having a three-dimensional local structure according to claim 1, eharacterized in that wherein the refractive index member is made of the same material as that of the body.
- 11. (Currently Amended) The two-dimensional photonic crystal slab having a three-dimensional local structure according to claim 1, eharacterized in that wherein the refractive index member is made of a material whose refractive index changes when the material receives an external operation.
- 12. (Currently Amended) The A two-dimensional photonic crystal slab having a three-dimensional local structure according to claim 1, comprising:



 a waveguide formed by providing linearly arranged defects of the modified refractive index areas in proximity to the refractive index member.